



बिरसा मुंडा ट्रायबल युनिवर्सिटी Birsā Mūṇḍā Drāyaball Yūnīvārsīṭī

राजपिपला, जि० नर्मदा Rajpipla, Dist. Narmda

Established by Tribal Development Department, Govt. of Gujarat

School of Science

B.Sc. (Chemistry) Programme

SUBJECT Code & Name: - BS04VACHE1 ENVIRONMENTAL STUDIES

Teaching and Evaluation Scheme:

Teaching Scheme				Examination Scheme			
Credits				Component Weightage (%)			
				CCE		SEE	
L	T	P	Total	TH	PWE	TH	PWE
2	-	-	2	50	00	50	00

Programme Name	B.Sc. (Chemistry)
Semester	IV
Course Code	BS04VACHE1
Course Title	Environmental Studies
Course Content Type (Th./Pr.)	Theory
Course Credit	2
Sessions+ Lab. Per Week	2
Total Teaching/Lab. Hours	30 Hours
* 2 Laboratory = 1 Session	

Learning Objectives

1. The primary objectives of environmental studies are to foster awareness, impart knowledge, cultivate concern, and encourage action towards environmental protection and sustainable resource use.
2. Aim to equip individuals with the knowledge, skills, and attitudes needed to understand and address environmental issues.
3. Understanding how ecosystem, climate, and natural resources function.
4. Applying the scientific method to investigate environmental issues

Prerequisites (if any)

Learning Outcomes

On the Completion of this course, students will able to:
Students will be able to:

1. Demonstrate mastery of core ecological and physical science concepts and methods as they pertain to environmental problem-solving.
2. Demonstrate mastery of core social science concepts and methods as they pertain to environmental problem-solving.





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3. Recognize and integrate the international, cross-cultural, and transdisciplinary nature of environmental problems in analyses and solutions.
4. Produce a culminating/multi-scale piece of work demonstrating the ability to synthesize concepts and methods to make a contribution to environmental solutions.
5. Apply proficiency in analytical methods, critical thinking, communication, and leadership skills sufficient to make a contribution in environmental and related fields.

Detailed Contents

UNIT	TOPIC/SUB-TOPIC	TEACHING HOURS
I	Introduction of Environment <ul style="list-style-type: none">• Components of Environment,• Man-Environment relationship• Impact of Technology on the environment• Environmental Degradation Ecology & Ecosystems <ul style="list-style-type: none">• Components of ecosystem- Producers, Consumers and Decomposers• Bio-Geo- Chemical Cycles, Hydrological Cycle, Carbon Cycle Oxygen Cycle, Nitrogen Cycle and Sulfur Cycle• Energy Flow in Ecosystem<ul style="list-style-type: none">• Food Chains: Grazing, Detritus, & Food webs• Ecological Pyramids• Major Ecosystems: Forest Ecosystem, Grassland Ecosystem, Desert Ecosystem, Aquatic Ecosystem, Estuarine Ecosystem.	15
II	Natural Resources and pollution <ul style="list-style-type: none">• Renewable Resources<ul style="list-style-type: none">- Solar energy, Wind energy and Biomass• Non-renewable Resources<ul style="list-style-type: none">- Fossil fuel- Minerals• Pollution:<ul style="list-style-type: none">- Air pollution- Water pollution- Soil pollution- Noise pollution- Thermal pollution• Current Environmental Global Issues:<ul style="list-style-type: none">- Global Warming & Green Houses Effects,- Acid Rain,- Depletion of Ozone Layer	15



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Reference Books

1. Pathfinder's Fundamentals of Ecology and Environment.
2. Environmental Studies: R. Rajagopalan, Oxford University Press
3. Environmental Pollution: Causes, Effects & Control by K.C Agrawal
4. Environmental Science by Richard T Wright & Bernard J Nebel
5. Environmental Science by Daniel B Botkin & Edward A Keller
6. Environmental Engineering & Management by Suresh K Dameja

Web Resources

Required Software(s) (if any)

L:: Lecture, **T::** Tutorial, **P::** Practical

CCE:: Continuous and Comprehensive Evaluation

(CCE Theory includes Mid Semester Examination, Assignment, MCQ quizzes, Seminar, Reflective notes, class participation, case analysis and presentation, slip tests (announced/surprised), attendance etc. or any combination of these)

PWE:: Practical Work Examination

(PWE includes Laboratory practical work, project work, viva simulation exercise work etc.)

SEE:: Semester End Evaluation

